

with perhaps no insurance coverage. A few people suffered minor injuries.—H. W. R.

*Weather Bureau staff meetings, 1928-29, by W. R. Stevens, Secretary.*—The regular biweekly meetings of the scientific and technical staff of the Central Office, which were initiated in the autumn of 1923, were continued during the winter of 1928-29. Following is a list of the discussions (asterisks denote speakers from outside the Weather Bureau).

October 3, 1928

W. R. Gregg. Meteorology as an aid to safe flying.

October 17, 1928

W. W. Reed. Discussion of two papers by W. Pepler.  
(a) Contributions to the knowledge of the surface temperature of Lake of Constance.

(b) Changes in relative humidity over Lake of Constance with warm and cold invasions.

October 31, 1928

C. F. Marvin. Discussion of the transactions at the meteorological meetings in Paris and London.

November 14, 1928

A. J. Henry. Rainfall of China.

E. B. Calvert. Transactions at the meteorological meeting in London.

November 28, 1928

C. F. Marvin. Present status of calendar reform.

H. H. Kimball. A sunspot cycle of solar-constant values.

December 12, 1928

H. C. Willett. Some aspects of air-mass analysis.

January 9, 1929

O. L. Fassig. The hurricane of September, 1928.

January 23, 1929

H. C. Frankenfield. Discussion of the Mississippi River flood-control problem.

A. J. Henry. Monthly charts of pressure anomaly.

February 6, 1929

F. E. Matthes.\* Some unusual forms of snow and ice.

February 20, 1929

F. G. Tingley. Load lines and other measures for safety at sea.

March 6, 1929

H. H. Kimball and W. J. Humphreys. Measurements of the amount of ozone in the earth's atmosphere and the altitude at which it is found.

March 20, 1929

W. J. Humphreys. Rainbows.

April 3, 1929

C. F. Marvin. Accumulated sums of departures as an index to climatic changes.

April 17, 1929

I. F. Hand. An investigation of the contamination of the atmosphere by an industrial plant.

A. J. Henry, H. C. Frankenfield, and R. H. Weightman. Discussion of the nomenclature of cyclones.

April 29, 1929

W. E. Hurd. (a) Northerners of the Gulf of Tehuantepec.

(b) Tropical cyclones of southeastern North Pacific.

C. F. Brooks.\* The 11-year period in San Diego rainfall.

May 13, 1929

C. F. Brooks.\* Further studies of Gulf Stream temperatures and current in the Straits of Florida.

*Meteorology. By David Brunt. 112 pages, 19 illustrations.*—It is a rare pleasure to find an elementary work on any science that one can unreservedly recommend. This book by an important official in the meteorological office, London, affords that pleasure. It covers the entire range of meteorology, except the optical phenomena, about as fully, perhaps, as the average person cares to know it. There are no mathematical equations, and no attempt to discuss things that require for their elucidation this type of formal logic. Nevertheless, Dr. Brunt evidently assumes that his readers already have some knowledge and want more, for he writes as one scholar to another and not, as so many authors of popular science do, as a romancer to blockheads.

Each of the 11 chapters is excellent, but the one that treats of that most difficult subject, the Origin of Cyclonic Depressions, is so exceptionally good as to deserve especial mention.—W. J. Humphreys.

*The past cold winter and the possibility of long-range weather forecasting,<sup>1</sup> by W. J. Pettersson.*—Modern meteorology has made notable advances in forecasting the weather of the next day, but when it attempts to predict the weather for more than a week ahead, the percentage of successes does not exceed 50 at the most. One reason for this failure is to be found in the refusal of the modern meteorologist adequately to take into account in the problem of weather prediction of direct terrestrial influences, such as that of the physical state of the surface waters of the oceans, even though he may be ready enough to take such an influence into account when dealing with one of those aerodynamical problems—for example, the life history of an Atlantic "depression"—which he regards as lying within his particular province. Another reason is his neglect of the "Polar-front" theory of Professor Bjerknes, one of the greatest authorities on aerodynamics and hydrodynamics.

Professor Bjerknes regards the polar regions as caps of cold air maintained largely in consequence of the local accumulations of ice and snow, offering a kind of cold circular wall facing the warmer winds of temperate latitudes. He considers that in conjunction with the strongly heated equatorial regions, they set up a circulation which brings warm air aloft from the equator to the pole, there to be cooled and to sink, weighed down by its increasing density, until it is absorbed into the polar cap; that these reservoirs of cold air at the poles are constantly discharging their accumulated air toward the equator along the earth, in accordance with "impulses" supplied by the region of low barometer around the equator; that the trade winds represent successful at-

<sup>1</sup> Reprinted from NATURE, London, May 25, 1929.